

seem to have been taken, by constructing a heading drain to receive the water from the hill on the outside of the building at the highest level: this drain communicated by means of channels, which also carried off the water from the upper circles, with a drain next the podium of the arena: this latter drain received also the internal water, and conveyed the whole by subsidiary channels to a main drain, which communicated at once with the sea shore. The rain-water from the main cornice outside was discharged at once through the apertures formed in the cornice at certain intervals.

The requisite public conveniences seem to have been placed in proper positions in the corridor, with smaller conduits leading from them to the larger drains.

Stancovich gives a calculation of the quantity of water which it might have been necessary to convey off at one time, and this appears to be so considerable, as to produce the consideration, whether a large excavation found in the centre of the arena might not have been intended to receive the rush of water, and to prevent the overflow of the drains by the quantity suddenly poured into them. It is believed that the main drain to the shore is immediately connected with this excavation. In this excavated space there are piers, both square and round, which it is supposed supported the floor of the arena. Naumachia would hardly have been introduced into an amphitheatre situated on the shore of a land-locked bay, which would have afforded the best natural basin to receive the vessels destined for the mimic combat. But the exact destination of the above-named excavated space, and whether it was, perhaps, intended to receive the beasts placed in cages, as in the Flavian amphitheatre, are still matters for consideration.

To convey an idea of the comparative size and capacity of this amphitheatre, it may be stated that the dimensions of the Coliseum are stated to be 626 by 517 feet, with accommodation for 87,000 spectators sitting, and 20,000 additional, standing; of the amphitheatre at Verona, 506 by 405 feet; of the amphitheatre at Nîmes, 437 by 332 feet, with accommodation for 24,200 spectators sitting; of the amphitheatre at Pola, 436 by 546, with accommodation for 26,000 spectators sitting, and 5,000 additional standing.

But the number of spectators here given seems to have been calculated upon a somewhat inadequate allowance of space to each person; and Maffei, allowing 1 ft. 6 in. to each sitting, supposes the capacity of the amphitheatre at Verona, the next in size to that at Rome, to have been not more than sufficient for 22,000 spectators sitting.

The details contained in the fourth volume of Stuart and Revett's *Antiquities* are so ample, as to render it unnecessary to do more than to refer to them for more intimate acquaintance with the style and peculiarities of this building. It may, however, be permitted to observe that, in many respects, the design and execution hardly equal the goodness of the material. It would appear, however, that the Romans, in building their amphitheatres, seem to have studied rather the general effect to be produced by the mass, than to have attended to high finish or refinement in the detail; and it must also be borne in mind, that the building under consideration is the work of an age some 150 years posterior to the Augustan era.

An inscription confiding the building to a Venetian senator, which appears on the walls, was occasioned, it is said, by a proposition seriously made to batter down the building with cannon—which was fortunately defeated by the urgent representations made by the citizens to the Venetian senate.

In respect to situation, this building has a decided advantage over the other Roman amphitheatres, and the drawings now exhibited show that it is so well placed in connection with the accessories to a well-conceived composition—the whole being, considered as a picture,—that the architect may be supposed to have had something beyond mere economy of labour and materials in view when, like the designer of the Sicilian theatre at Taormina,

he placed his building in so striking and picturesque a position.\*

#### SOME OF THE IMPEDIMENTS TO THE ADVANCEMENT OF ARCHITECTURE.†

THAT the position at present held by architecture is not that most agreeable to its professors, most of them will readily concede, though upon the causes of that position I do not look for the same unanimity. Many will be disposed to think that the fault lies wholly with the public, and will decant at length upon the coarsely utilitarian and mercenary tastes of the day, and the absence of any refined æsthetic cultivation; and they will forbid the indulgence in brighter anticipations until the Greek Kalends, if, indeed, they do not positively affirm that the golden age of architecture is altogether past.

But I am not disposed quietly to sit down under so depressing a conclusion, and one which I feel is likely to be as unjust towards the public as it is calculated to prove injurious to the proper cultivation and further development of the art we have adopted. I fear that the words "further development" will be received by some with a species of quiet wonder that any one should be found indulging in a belief so utopian as that architecture is capable of further development. Be that as it may, it cannot be injurious for me to attempt to distinguish how much of the present condition of architecture is due to the profession, and how much to the public.

And as in the observations I am about to offer I shall adopt the barrister's privilege, and indulge in considerable freedom of remark, I wish it to be distinctly understood that I do not adopt the barrister's license—that I make no personal allusions,—but speak only of principles and conduct, without reference to the persons by whom they are supported.

When urging the claims of our profession to courteous and respectful treatment, such as is usually accorded to the legal and medical professions, I have been told that such claims would be valid if admission to its practice were guarded by the ordeal of an examination; but that so long as it is open to any comer or goer, be he builder or tailor, cobbler or ship-broker, its members must submit to the unworthy treatment at present too frequently meted to them. I am sure, for the reason assigned, that the gentleman who thus hypothetically admitted the claims to courteous and equitable consideration, quite misunderstood the advantages to be secured by an examination; but still I think that this suggestion, which has been frequently made, is worthy of more consideration than it has yet received.

The æsthetic elements of architecture are too subtle to be submitted to the rude analysis of question and answer, especially as we have no standard by which the student's conceptions of beauty may be adjusted; but his scientific and business-like talents and experience are as easily determined in architecture as in medicine or law, or in the departments of learning at an university. Aspirants to the ministry in the church are examined upon their attainments in the various branches of learning required in their sacred calling; but no one attempts to gauge the depth of their piety, the extent of their charity, the strength of their fortitude, the earnestness of their self-denial and self-devotion, without the possession of which qualities their office sinks from a position the most sacred to that most profane. And so in architecture: there is no difficulty in testing mathematical acquirement, the knowledge of the strength and stress of materials, or the rules of proportion; the amount of ecclesiastical or archaeological lore; and the capacity for devising the most convenient arrangement of limited space; or of meeting the accidental requirements of peculiar localities; though it is hopeless to determine how far the student is suited to become a minister of beauty, an exponent of that divine sympathy which knits into perfect accord the most cultivated minds of every

\* To be continued.

† Read by Mr. Scott at the Liverpool Architectural and Archaeological Society, April 2.

age. But in the absence of an examination much may be done towards impressing the public with a sense of the claims of our profession to respectful treatment by the personal conduct of each practitioner. No man can long pursue an independent and upright course without earning the respectful regard of most of those who come into communication with him; and if every architect would steadily pursue such a course, the respect accorded to each would be gradually extended to all. At present, I fear that the eagerness of professional rivalry too frequently induces a forgetfulness of that high-minded chivalry which should animate all who devote themselves to the ministry of the beautiful; who aspire, however humble their talents or opportunities may be, to emulate the noble efforts of their brilliant predecessors. We look not for high-mindedness from the sordid man; for sublimity or nobility from the ignoble and mean.

The management of public competitions is frequently adduced as evidence of the universally low appreciation of architecture; but I rather regard it as indicating the absence of self-respect on the part of the profession. If a man makes a purchase of any kind, he generally has submitted to him a variety of patterns or designs from which to make his selection. That there is great pleasure in the exercise of choice is proved by the enormous time which ladies consume in shopping, gentlemen at the wine-merchant's, and both at the silversmith's, upholsterer's, or paper-hanger's.

Now, as the public are allowed so much choice when only spending a small sum, they look for at least as much where the outlay is so serious as in building operations; and I am not sure that when a man first employs an architect, he has not a vague sensation of surprise that he cannot inspect several yards of designs, and have any that he likes cut off to order; but, at any rate, he is quite determined to have a choice in so weighty an affair as a building. The lady's dress may be irreparably torn at the first ball, and the wine unmistakably corked when decanted, but the house will probably endure for many generations: if deliberation be required in the choice of the former, whose interest is so temporary, how much should it be exercised in the more enduring. It is also to be remembered, that no specific charge is made by the tradesman, however extensive the choice, or whatever trouble may be given; but though only one architect be employed to prepare a variety of designs to order, he will require some remuneration for his trouble; and though the amount may be extremely inadequate in his own estimation, his employer will probably have a very different opinion. It was a happy thought, therefore, that of inviting a number of architects to compete for a premium, the amount of which should be very much less than the usual professional charge; for thus not only is money saved, but time also; and a greater variety of choice is secured, for the designs of fifty architects will exhibit more variety than fifty designs by one.

Let us take a case by way of illustration, and see how "competitions" injure the profession.

A committee is appointed to obtain designs for a building which is to cost, complete, say 6,000*l*. If one architect be employed, his charge for a design, working drawings, specification, and contractor's estimate would be 2*l* per cent. or 150*l*. But if, instead of going to one architect, the committee advertise for designs, and invite the profession at large to compete for a premium of 50*l*., they are likely to obtain fifty designs, with *bona fide* estimates (or such as profess to be so), for the 50*l*.; in other words, they have a very much more varied choice of designs for one-third of the regular cost; and, after all, can confide the execution of the work to some favoured practitioner, who will readily consent to have his 5 per cent. mulcted of the 50*l*.; and if the committee manage well, they will very likely obtain a larger discount off the commission.

Now, what have the committee done? In what manner have they acted? Why, they are shrewd men of business, who know how to get twenty shillings' worth for a pound. Ar-